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Job No.: CTCE/BBMP/W.No.13/SR/WMM/Gradation/2014-15

12.06.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.

Agency : **Mr. S. Ramesh,** Contractor, Bangalore.

Name of Work : Pot holes filling in Ward No.13, in Shettyhalli Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/SSD/DZ/2014-15 Dated: 09.06.2014

Date of Testing : 12.06.2014

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): **7700**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	105	105	1.4	98.6	95-100
22.4	2500	2605	33.8	66.2	60-80
11.2	1850	4455	57.9	42.1	40-60
4.75	900	5355	69.5	30.5	25-40
2.36	780	6135	79.7	20.3	15-30
0.600	650	6785	88.1	11.9	8-22
0.075	665	7450	96.8	3.2	0-8

Note:

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AE 13

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು
ಶೆಟ್ಟಿಹಳ್ಳಿ ಉಪವಿಭಾಗ, ದಾಸರಹಳ್ಳಿ ವಲಯ
ಬೃಹತ್ ಬೆಂಗಳೂರು ಮಹಾನಗರ ಪಾಲಿಕೆ
ಎಸ್.ಎಂ ರಸ್ತೆ, ರವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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Job No.: CTCE/BBMP/W.No.13/SR/WMM/AIV/2014-15 12.06.2014

Aggregate Impact Value

IS: 2386 Part IV

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	**Mr. S. Ramesh,** Contractor, Bangalore.
Name of the Work	Pot holes filling in Ward No.13, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/2014-15 Dated: 09.06.2014
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	12.06.2014

Sl No.	Details	Trial No. 1	Trial No. 2	Average
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	380	382	
2	Weight of agregate passing 2.36 mm sieve after the test = W_2 g	82	85	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	298	297	
4	Aggregate Impact value = percent fines	21.58	22.25	
	100* (W_2/W_1)%			21.92

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No.: CTCE/BBMP/W.No.13/SR/WMM/S-T/2014-15 12.06.2014

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Client	**Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
Agency	**Mr. S. Ramesh,** Contractor, Bangalore.
Name of Work	Pot holes filling in Ward No.13, in Shettyhalli Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/SSD/DZ/2014-15 Dated: 09.06.2014
Technical Reference	IS 2386(Part 1) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	12.06.2014

Civil-Tech Consultants & Engineers Bangalore

Result : Flakiness Index = **11.99%**

Elongation Index = **13.68%**

Result : Combined Flakiness & Elongation index 25.67%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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JobNo: CTCE/BBMP/W.No.13/SR/BC/Bitumen/2014-15 23.06.2014

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
AGENCY	**Mr. S. Ramesh,** Contractor, Bangalore.
NAME OF THE WORK	Pot holes filling in Ward No.13, in Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/2014-15 Dated: 09.06.2014
SAMPLE I/D	Road cutting portion in Shettyhalli Sub Division, Ward No.13, BBMP, Bangalore.
DATE OF TESTING	23.06.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	26.50
7. Bitumen content in %	5.20	5.30
8. Average	**5.25**	

Note:

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JobNo: CTCE/BBMP/W.No.13/SR/BC/Bitumen/2014-15 23.06.2014

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
AGENCY	**Mr. S. Ramesh,** Contractor, Bangalore.
NAME OF THE WORK	Pot holes filling in Ward No.13, in Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/2014-15 Dated: 09.06.2014
SAMPLE I/D	Road cutting portion in Shettyhalli Sub Division, Ward No.13, BBMP, Bangalore.
DATE OF TESTING	23.06.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	44.52	9.39	9.39	90.61	79-100
9.5	35.62	7.51	16.91	83.09	70-88
4.75	71.24	15.03	31.94	68.06	53-71
2.36	66.35	14.00	45.93	54.07	42-58
1.18	48.23	10.18	56.11	43.89	34-48
0.6	66.35	14.00	70.11	29.89	26-38
0.3	51.28	10.82	80.93	19.07	18-28
0.15	25.65	5.41	86.34	13.66	12-20
0.075	32.25	6.80	93.14	6.86	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	30.25	6.39	6.39	93.61	79-100
9.5	43.25	9.13	15.52	84.48	70-88
4.75	72.25	15.26	30.78	69.22	53-71
2.36	62.32	13.16	43.94	56.06	42-58
1.18	70.28	14.84	58.79	41.21	34-48
0.6	43.25	9.13	67.92	32.08	26-38
0.3	34.52	7.29	75.21	24.79	18-28
0.15	41.25	8.71	83.92	16.08	12-20
0.075	40.89	8.59	92.52	7.48	4-10

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ಎಸ್.ಎಂ.ಪಿ. ಡಾ. ಶಿವೀಂದ್ರನಗರ, ಬೆಂಗಳೂರು

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JobNo: CTCE/BBMP/W.No.13/SR/BC/Bitumen/2014-15 24.06.2014

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
AGENCY	**Mr. S. Ramesh,** Contractor, Bangalore.
NAME OF THE WORK	Pot holes filling in Ward No.13, in Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/2014-15 Dated: 09.06.2014
SAMPLE I/D	Road cutting portion in Shettyhalli Sub Division, Ward No.13, BBMP, Bangalore.
DATE OF TESTING	24.06.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	27.00
7. Bitumen content in %	5.20	5.40
8. Average	**5.30**	

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AE:3

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JobNo: CTCE/BBMP/W.No.13/SR/BC/Bitumen/2014-15 24.06.2014

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** Shettyhalli Sub Division, Dasarahalli Zone, BBMP, Bangalore.
AGENCY	**Mr. S. Ramesh,** Contractor, Bangalore.
NAME OF THE WORK	Pot holes filling in Ward No.13, in Shettyhalli Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/SSD/DZ/2014-15 Dated: 09.06.2014
SAMPLE I/D	Road cutting portion in Shettyhalli Sub Division, Ward No.13, BBMP, Bangalore.
DATE OF TESTING	24.06.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	38.85	8.20	8.20	91.80	79-100
9.5	36.25	7.65	15.84	84.16	70-88
4.75	76.35	16.11	31.95	68.05	53-71
2.36	69.52	14.67	46.62	53.38	42-58
1.18	56.36	11.89	58.51	41.49	34-48
0.6	66.32	13.99	72.50	27.50	26-38
0.3	42.26	8.92	81.42	18.58	18-28
0.15	25.66	5.41	86.83	13.17	12-20
0.075	35.62	7.51	94.34	5.66	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	31.22	6.60	6.60	93.40	79-100
9.5	71.25	15.06	21.66	78.34	70-88
4.75	70.23	14.85	36.51	63.49	53-71
2.36	59.65	12.61	49.12	50.88	42-58
1.18	71.24	15.06	64.18	35.82	34-48
0.6	41.23	8.72	72.90	27.10	26-38
0.3	33.26	7.03	79.93	20.07	18-28
0.15	29.89	6.32	86.25	13.75	12-20
0.075	30.89	6.53	92.78	7.22	4-10

AE13
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